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<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/707,783	DAVIS, KENNETH MICHAEL	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jason Benton	3747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/1/05.
2. ☒ The allowed claim(s) is/are 26.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance             |
|   | 9. <input type="checkbox"/> Other _____   |

  
**Henry C. Yuen**  
Supervisory Patent Examiner  
Group 3700

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows: In the specification, prior to "DETAILED DESCRIPTION" on page 5,

add – BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1: A cross sectional view of the engine.

Figure 2: A view of the heli-shaft element.

Figure 3: An exhaust port of a prior art engine.

Figure 4: A detailed view of elements in the cylinder head.

Figure 5: A view of the heli-shaft.

Figure 6: A view of the heli-shaft in Straight line engine.

Figure 7: A view of the heli-shaft in a V-type engine. –

In the claims:

Cancel claims 16-21,

add – Claim 22:

A multiple cylinder internal combustion engine including:

a piston,

a crankshaft,

a connecting rod connecting said piston to said crankshaft,

a cylinder head,

a combustion chamber defined as the area between the piston and the cylinder head,

a bore in the cylinder head,

the bore being perpendicular to each cylinder and parallel to the cylinder bank,

a rotary valve system provided in said bore,

said rotary valve system containing a solid cylindrical shaft, and a cylindrical tube fixedly attached to the outside of said shaft,

said shaft including a helical intake groove and a helical exhaust groove along the surface of the outside diameter,

said helical intake groove and said helical exhaust groove being independent of one another,

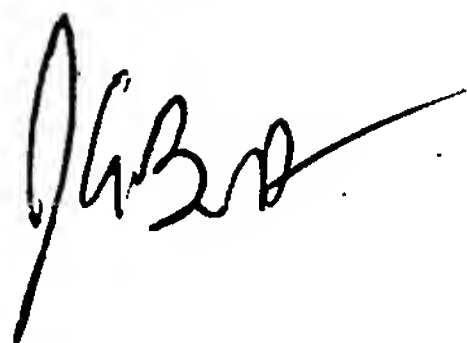
said cylindrical tube having multiple openings to allow fluid

communication between the combustion chamber and the helical intake and exhaust grooves, and allowing the fluid communication during the proper intervals of a combustion cycle,

multiple intake/exhaust ports in said cylinder head,

Art Unit: 3747

each individual intake/exhaust port providing fluid communication between a corresponding combustion chamber and said rotary valve system, the length of the helical intake groove being continuously supplied with an air/fuel mixture via a single air entry port, the length of the exhaust helical groove being sequentially filled via a corresponding intake/exhaust port opening and expelled through a single exhaust exit port, the helical intake groove and the helical exhaust groove being aligned on the shaft so as to be distanced from the intake/exhaust port during a compression phase of the combustion process. —

A handwritten signature in black ink, appearing to read 'Jh3a', located in the lower-left quadrant of the page.